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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Sun Park

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EXAMINER

VERBITSKY, GAIL KAPLAN

ART UNIT

PAPER NUMBER

2859

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/629,186

Applicant(s)

PARK, SUN

Examiner

Gail Verbitsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10-21 and 24-30 is/are rejected.
- 7) ☒ Claim(s) 8-10, 22-24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/31/2003.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 26-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this case,

Claim 26: "a method of reducing thermocouple error" as stated in claim 1 makes the claim language confusing because it is not clear what particular error applicant means, and there is no steps of error reduction described in the body of the claim.

Claims 27-29 are rejected by virtue of their dependency on claim 26.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 6-7, 25 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Moore (U.S. 4698454).

Moore discloses in Fig. 1 a thermocouple junction box/ holder comprising a cup/ contact element (insulation rings) 52 and studs 24, 26 for holding terminals 28, 30 (16, 18) of a thermocouple probe 14, wherein the studs are electrically isolated from the cup

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52 and mechanically coupled to it. The thermocouple is a chromel-alumel type (K-type) thermocouple. The studs are threaded. The device comprises a conductive element made of an electrically conductive material (connector/ washer) 22 electrically connecting the thermocouple terminals (cable). Since the stud is threaded, it can move through the washer 22, thus, in a broad sense, it can be considered that the washer is movable relative to the stud along the length of the stud.

For claim 30: the device comprises a thermocouple junction 32, a connecting portion (support ring) 52 wherein, the hot junction 32 is electrically connected to the thermocouple wires (cable) 28, 30 and electrically isolated from the connecting portion (support ring) 52.

4. Claims 1, 3-4, 10-11, 14-15, 17-19, 26 (as best understood by Examiner), 28-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Polye et al. (U.S. 2483350) [hereinafter Polye].

Polye discloses in Fig. 1 a device/ thermocouple junction box comprising a cup-shaped housing (cup/ contact element) 1, a threaded stud 12 is mechanically coupled to the cup 1 and disposed within the cup 1 and being electrically insulated from the cup 1 by means of an insulator (ceramic) 9 of an annular shape. The device also comprises chromel-alumel thermocouple conductors 5, 6. The thermocouple's hot junction is in contact with a shield 19, which is a part of the cup 1 and made of nickel-chrome alloy known as Inconel (K-type material).

The method steps will be met during the normal operation of the device stated above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6-7, 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polye et al. (U.S. 2483350) [hereinafter Polye] in view of Moore.

Polye discloses in Fig. 1 a device comprising a housing (cup) 1, a threaded stud 12 disposed within the cup 1 and being electrically insulated by means of an insulator (ceramic) 9 from the cup 1. The device also comprises chromel-alumel thermocouple conductors 5, 6. The thermocouple's hot junction is in contact with a shield 19, which is a part of the cup 1 and made of Inconel.

Polye does not explicitly teach a conductive element being a lug, as stated in claims 6-7.

Moore discloses a device in the field of applicant's endeavor comprising an electrical connector (contact element/ conductive element) 18 and 22, wherein the connector 22 is being a lug. As shown in Fig. 2, when a stud (screw) 26 is inserted, the conductor 22 moves along the stud 26. The conductive element 22 is connected to thermocouple wires (cable) 30.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Polye, so as to replace the conductive element with a lug, as already suggested by Moore, because both of

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them are alternate types of conductive elements, which will perform the same function, of being attached to the stud and conducting electrical current from the thermocouple leads to a device of interest, if one is replaced with the other.

The method steps will be met during the normal operation of the device stated above.

7. Claims 5, 16, 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polye.

Polye discloses in fig. 1 a device comprising a housing (cup) 1, a threaded stud 12 disposed within the cup 1 and being electrically insulated by means of an insulator (ceramic) 9 from the cup 1. The device also comprises chromel-alumel thermocouple conductors 5, 6. The thermocouples hot junction 17 is in contact with a shield 19, which is a part of the cup 1 and made of Inconel (nickel-chrome alloy/ K-type metal).

Polye does not explicitly state that the stud is a stainless steel, as stated in claims 5 and 16, and thus, made of different materials, as stated in claim 27.

With respect to the particular material, i.e., stainless steel, as stated in claims 5, 16, to make the stud, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the stud disclosed by Prior art since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made

to make the stud in the device, disclosed by Polye, with the stud made of stainless steel, because stainless steel is known to be a strong and corrosion free metal commonly used for studs in electrical connectors and junction boxes.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Polye in view of Champoux et al. (U.S. 4202242) [hereinafter Champoux].

Polye discloses the device as stated above in paragraph 4.

Polye does not teach the limitations of claim 12.

Champoux teaches to attach one structure to another by using interference fit.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Polye, so as to attach the stud to the cup by means of interference fit, as taught by Champoux, to the insulation material, so as to ensure a tight seal between the stud, insulation and cup, protecting the device from water related damage.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Polye. Polye discloses the device as stated above in paragraph 4.

Although Polye shows the attachment of the stud to the insulation and to the cup, as shown in Fig. 1, Polye does not explicitly teach using brazing or welding, as stated in claim 13.

With respect to claim 13: using brazing or welding to attach the stud to the cup, absent any criticality, since it is very well known in the art to attach two structures together using brazing or welding. Therefore, the use of brazing or welding to attach the

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stud to the insulation and the cup, absent any criticality, is only considered to be nothing more than a choice of engineering skill, the choice or design, because: 1) neither non-obvious nor unexpected results, i.e., results which are different in kind and not in degree from the results of the prior art, will be obtained as long as the stud is attached to the insulation and the cup as already suggested by Polye, 2) brazing or welding claimed by applicant and the attachment used by Polye are very well known alternate types of attaching means which will perform the same function, if one is replaced with the other, of attaching the stud to the insulation and the cup, if one is replaced with the other, and 3) the use of brazing or welding by applicant is considered to be nothing more than the use of one of the numerous and well known alternate types of attaching means that a person having ordinary skill in the art would have been able to provide using routine experimentation in order to sealingly attach the stud to the insulation and the cup.

Allowable Subject Matter

10. Claims 8-10 and 22-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Information Disclosure Statement

11. The information disclosure statement filed on October 31, 2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each publication or that portion which caused it to be listed; and all other information or that portion which caused it to

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be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication should be directed to the Examiner Verbitsky who can be reached at (571) 272-2253 Monday through Friday 8:00 to 4:00 ET.

GKV

Gail Verbitsky

Primary Patent Examiner, TC 2800



June 21, 2004